



# Illinois Fire Service Institute

## **ANNUAL REPORT** FY2010

*Providing  
real training  
in realistic  
environments  
for 86 years*



## From the Director

I am pleased to present the 2010 Annual Report of the Illinois Fire Service Institute, Illinois' statutory State Fire Academy at the University of Illinois.

During 2010 we saw the completion of a decade-long effort to achieve our Vision 2010. This led to more than doubling the number of firefighters and courses taught annually. It saw the creation a national firefighter life safety research program, a robust online learning program, new training props, the creation of a strong partnership with the Illinois Terrorism Task Force and completion this year of our new Learning Resource and Research Center.

Our vision for the next decade is to build upon these accomplishments and fundamentally enhance our ability to help firefighters in Illinois, throughout the nation and across the world to do their work better and more safely by providing the best hands-on and 21st Century-relevant Training, Education, Information and Research.

None of what we have accomplished could have been done without the continuing strong support of firefighters and fire service leaders across Illinois and the nation, our many public and private partners, elected leaders and the faculty and staff of the University of Illinois. Thank you for allowing us to serve you and for your support.



**Richard L. Jaehne**  
Director

## From the Chancellor/Provost

I am happy to salute the Illinois Fire Service Institute (IFSI) in its 86th year of successful and targeted service to the courageous first responders and the citizens of Illinois.

The Illinois Fire Service Institute's mission is not only exemplary but is also one that benefits this university. Our staff and the Institute's staff pool and share their resources while collaborating on focused inter-disciplinary research and academic programs. This year we will celebrate the opening of IFSI's Learning Resource and Research Center. The updated, modern training facilities and libraries are already having a markedly positive impact across our campus. In fact, the IFSI has met and exceeded its ambitious mission.

The Illinois Fire Service Institute continues to be this state's center for firefighter safety. I want to commend the Institute's staff, its partners and everyone affiliated for their outstanding work in the past year.

**Robert A. Easter**  
Chancellor and Provost (Interim)



“We understand the challenges of a fire department response and create a training environment that replicates that.”

—**Roger Lunt**  
Deputy Director, IFSI





## Some highlights of the past year

- With overwhelming support of the Fire Service, the state legislature provided permanent, statutory funding for the Cornerstone Training Program, which provides essential hands-on training for firefighters across Illinois.
- Expanded our training capabilities with the addition of new props, including a 9500 square foot simulated commercial and residential fire fighting “streetscape” and an extensive above-grade trench rescue simulator.
- Developed our first “blended learning” Fire Apparatus Engineer online course that combines learning at a distance with on-site hands-on training.
- Created a working relationship with Parkland College to award college credit for firefighters who complete Institute courses. Credits can be applied toward degree programs at any Illinois community college.
- Reached firefighters in 99% of Illinois’ counties with IFSI training, education, information and research programs.
- Developed the Special Operations Training Program (SOTP) structure that brings together a wide range of rescue disciplines — rope rescue, confined space rescue, structural collapse, trench rescue, machinery rescue, and HazMat — into one training program.
- Received a U.S. Department of Homeland Security grant to study the influence of aspirin on heart attacks in firefighters.
- Delivered more than 900 *hands-on* training courses to 42,757 students.

*Other significant highlights are included throughout the annual report, under their respective areas.*

### **In FY2010, IFSI registered 52,379 students.**

- **1,071 different courses**
- **17,956 class hours**
- **584,892 student hours**
- **967 Illinois fire departments**
- **143 other response organizations**
- **2,480 students in officer training courses**

*Classes were offered in 316 locations and attended by first responders from 101 Illinois counties.*



IFSI congratulates **David F. Clark**, who retired in August 2010 after 45 years in the fire service—34 years with IFSI as an instructor, program director and ultimately Deputy Director.

## A world-class faculty and staff

More than 500 of the top professionals in the nation are members of the IFSI faculty and field staff. Many are active-duty firefighters and officers, and their practical experience and expertise have brought national recognition to IFSI’s programs.



“The instructors were truly incredible. They were able to be critical, constructive, and corrective on the fireground and in the classroom.”

*—Firefighter/Acting Officer  
with 16 years experience*



## Featured Events

IFSI's flagship event – **the 86th Annual Fire College** – brought almost 900 firefighters to Champaign, Illinois in June for America's oldest continuous fire school. The four-day event featured hands-on experience with the newest firefighting equipment, technologies and techniques.

The **15th Annual Winter Fire School** offered a full weekend of training in January in Champaign, Illinois. A total of 327 firefighters enrolled in short courses and NFA classes focused on training needs for small and volunteer fire departments.

The 8th annual **Explorer-Cadet Hands-On Training Fire School** in June hosted 364 students, ages 14 to 21, and their chaperones for a four-day program of hands-on training and leadership experiences.

“Thanks again to you and your staff for an outstanding weekend of training for the Explorers. You and your staff are truly shaping the future of the fire service not only in Illinois but nationwide.”

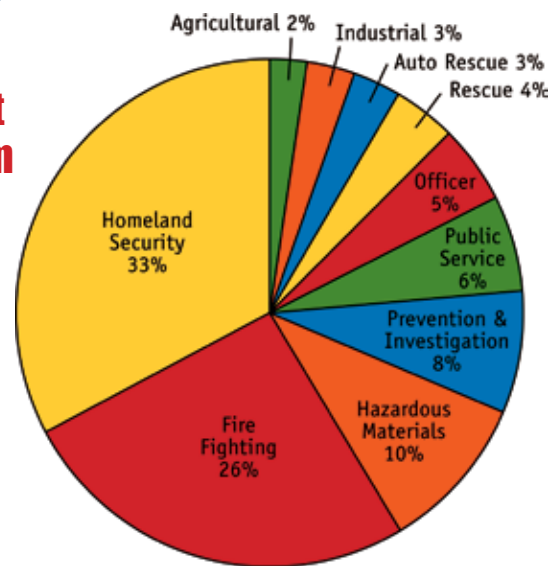
–**Captain Nate Hopper**  
Trussville Fire and Rescue  
Trussville, AL



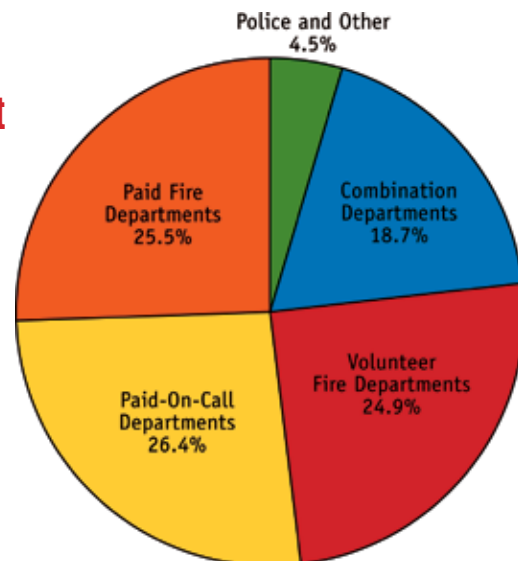
The Annual Fire College is IFSI's flagship event.

## Training Programs

### Enrollment by program area



### Enrollment by Career Type





## IFSI Training Programs: New Training Resources in FY2010



### New Training Props

- A 9500 square foot “streetscape” was completed and put into service. This training area simulates a typical mixed use business and residential street and includes an alleyway, laundromat, restaurant, office and apartments in a multi-story building.
- A trench rescue prop (top right), assembled from 16 sea land containers, provides a safer and more dynamic prop in a controlled environment. Students can safely observe rescue techniques from the bottom of the trench.
- A rail car, donated by Decatur Memorial Hospital, will be especially useful in HazMat training to simulate chemical leaks and spills, as well as confined space rescues.
- The “rescue city” was upgraded to include more training opportunities. Additions include a vertical element (an elevator shaft) to the “rock pile” and a command post to introduce incident command in training for collapse rescue operations. The lightweight construction house prop was also redesigned with more shoring to provide additional search-and-rescue challenges for students.

### New Apparatus

- IFSI took delivery of two squad vehicles donated by North Palos Fire Protection District for use in fire fighting classes. Squad 2 will serve a dual purpose as an ambulance for EMS classes.
- Hanover Park Fire Department donated our new Engine 5, which has a modern pump panel (bottom right) and will be set up primarily for pump operator training and Fire Apparatus Engineer classes. This engine offers students the benefit of hands-on practice with the type of equipment they’re most likely to be using in their home departments.



“It’s great to be able to train on newer equipment. That’s what we are most likely to deal with in the field.”

—Fire Apparatus  
Engineer student

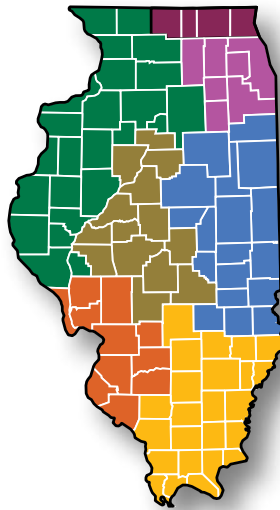


## Cornerstone Program

IFSI's Cornerstone Program – an outreach effort that offers no-cost training in fundamental skills – is now a permanent part of the state's budget. Legislation passed in the summer of 2010 assures that Cornerstone training will continue to be available to all Illinois firefighters.

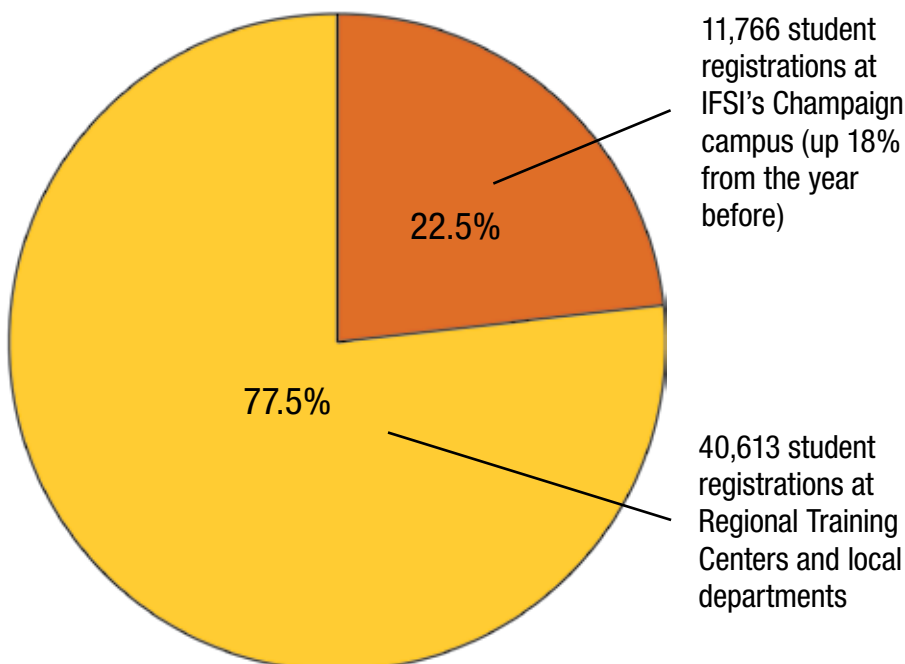
Cornerstone courses are presented throughout the state in fire departments' local facilities and at IFSI Regional Training Centers and fire schools. In FY2010, IFSI offered Cornerstone classes, propane classes, petroleum fire classes and wildland firefighter classes at 777 departments, in 212 locations in 94 counties.

IFSI's seven regional representatives work with departments in their areas to ensure that all Illinois firefighters have access to Cornerstone training opportunities in their localities. They also help departments evaluate their needs and apply for federal grants to support training programs and equipment acquisitions.



## Student registrations

More than 77 percent of IFSI training is delivered at local departments throughout the state and Regional Training Centers.



### Cornerstone Delivery

316 classes  
664 departments  
7,848 students

### Illinois Propane Education and Research Council (IPERC) Training

66 classes  
325 departments  
1,999 students

### Illinois Petroleum Resources Board Oil Well Fire Training

2 classes  
27 departments  
136 students

### Illinois Department of Natural Resources Wildland Training

7 classes  
42 departments  
208 students

"I would like to personally thank you and the instructors that ran our Acquired Structure Burn Training... The knowledge and experience that the instructors delivered... will have a lasting and positive impact (on our personnel) for the rest of their careers."

—Brian Plyer, B/C of Training  
Joliet Fire Department



**Three out of four  
IFSI classes are  
hosted locally.**

## **Training Firefighters Where they Live and Work**

Classes locally-hosted by fire departments and our Regional Training Centers connect with Illinois firefighters and make it possible for them to receive quality training close to their home departments. The Centers maintain a wide range of facilities and equipment, including burn structures and rescue and HazMat training props that are funded by the Illinois Terrorism Task Force.

## **Field Training Highlights**

- IFSI added to its extensive fleet of trailers and portable props that deliver training in the field. New this year is a trailer for hands-on exercises in HazMat situations.
- Firefighters in Williamson County had the opportunity to take two courses in one weekend at their local Regional Training Center in Marion, Illinois. IFSI field instructors offered intensive training that allowed students to complete the Fire Officer 1 and Arson Investigation courses.
- Federal funding for wildland fire fighting training was reinstated, with classes held in seven counties.
- More than 100 HazMat training courses were delivered in FY2010.



Acquired structure burn training in the field.



Propane fire training in the field.



Springfield Regional Training Center

## Learning at a Distance

### FY2010 Highlights

- Expanded blended learning courses that allow students to complete most coursework online and finish with practical training, saving on-site training dollars for departments and providing access to more students.
- Developed two new online courses: Fire Apparatus Engineer (FAE) Online and AFG Grant Writing Online.
- Obtained Panopto software, which allows IFSI to capture live classes for repeat delivery and course archives.

**Also new in FY2010:** The buildings on the Champaign campus underwent extensive upgrades to their fiber-optic connections to the University of Illinois campus, giving IFSI greater capacity to serve firefighters via online services. Students and staff now have wireless connectivity throughout most of our Champaign campus and training grounds.

“I would not have been able to become a Firefighter II if it wasn’t for the online classes.”

—Online student



### Blended learning courses

IFSI continues to be an innovator in the design and delivery of online courses. This year, we developed our first blended course – Fire Apparatus Engineer Online – which can be completed with 13 weeks of online study followed by two days of hands-on training at the Champaign campus or a regional training site. This new format reduces the time and costs of travel and hotel accommodations for students. It also eases staffing concerns and overtime budget expenses at students’ home fire departments and municipalities.

Another new addition to the curriculum is AFG Grant Writing Online, a self-paced, self-directed course that is drawing interest from students throughout the nation.





# Learning Resource and Research Center



*Research, training and  
educational resources for  
fire and emergency services*





**The Learning Resource and Research Center is a more than 21,000-square-foot facility that offers an extraordinary new set of capabilities to support IFSI's work in training, information, education and research.**

**The Firefighter Memorial Hall** honors fallen firefighters with the Line of Duty Death memorial and a large mural that will depict the contrast of early and modern fire fighting methods. The Memorial Hall will also serve as a visual extension to IFSI's Line-Of-Duty-Death online database. It's open to the public.

**The Memorial Plaza** is the brick walkway surrounding the main entrances to the LRRC and the Memorial Hall. Individuals, businesses and organizations can contribute to IFSI by sponsoring paving bricks in the Plaza. More than 8,000 bricks are available and can be personalized with engraved messages to memorialize firefighters, honor friends or family members or communicate support for the Institute's work.



**Each day, the page is turned to reveal the names of those who lost their lives in Illinois in the line of duty.**





## Library and Information Services

**The IFSI Library** is the only library in the state dedicated to fire and emergency services. Its growing collection is available to Institute staff, firefighters and other emergency responders and University of Illinois students.

### FY2010 Highlights

- The IFSI Library reference team completed more than 3900 reference requests and circulated more than 1500 items to library patrons. Nearly 900 emergency responders received library training by participating in classroom, one-on-one or Internet-based training workshops.
- New services are offered through the compilation of innovative special collections, including the "Illinois Incident Report Case Studies Collection" and the "Fire Service Dissertations and Theses Collection."
- The newly established Illinois Fire Service Archives preserves resources that document the history of the fire service in Illinois, including Firefighter Medal of Honor and Medal of Valor recipients.
- "IFLODD: The Illinois Firefighter Line of Duty Deaths Digital Image Collection Database" was enhanced with a new "Image & Audio Search" that lets users search directly for image and audio files contained in the database. It also includes an "Interactive Charts" feature that allows users to generate graphics that summarize statistics and other data gleaned from the firefighter deaths documented in the database.



"The library is an awesome and convenient resource. I am teaching a class and this will be very helpful!!!"

**-Eric Norlin**

*Division Chief of Fire Prevention  
Lincolnshire-Riverwoods FPD*





**Conference Center** improved our communications and training with a 10 gigabyte fiber Internet connection, live video transmissions, digital recording facilities and simultaneous translation booths.

## Specialized Training Facilities

**The Incident Management Training Facility** (lower level) incorporates the most advanced technologies for simulating actual emergencies and Emergency Operations Command (EOC) operations — meeting the growing demand for National Incident Management System (NIMS) training. Illinois communities can use the Center to train their staffs and test their emergency plans and response capabilities.

In addition to its training functions, the facility is equipped to serve as a secure and fully operational disaster center should the university need it. These facilities provide IFSI with the same NIMS training capabilities as FEMA's National Incident Management Institute Command Trainer at Emmitsburg, Maryland.

In FY2010, IFSI introduced six position-specific classes that were taken by nearly 100 students. New classes are Incident Commander (twice), Public Information Officer, Planning Section Chief, Resource Unit Leader and Situation Unit Leader.



## Research Center

**Research Laboratories** provide state-of-the-art facilities for developing practical solutions to problems faced by emergency responders. The dedicated laboratory space features an expanded Firefighter Life Safety Research Center, a new Fire Protection Engineering lab and a high-temperature environmental chamber that can simulate the heat of an actual fire. Other resources include a hemostasis lab, biological safety cabinet, freezer, exercise equipment and cardiovascular measurement devices.







IFSI Director Jaehne discusses research collaboration at Tsinghua University with Professor and Academician FAN, Weicheng (left), who is with the Center for Public Safety Research.

## International Outreach

### FY2010 Highlights

- Hosted 27 participants in the sixth annual Chinese Librarians Summer Program in June 2010. The program and newly developed yearbook were well received both on campus and in China.
- Delivered incident command and emergency management training to representatives from China's Tsinghua University Center for Public Safety Research, managers from the Three Gorges Dam Company and Software Development Company, and professors from Tsinghua University and East China University of Science and Technology.
- Hosted ten officials from the Hong Kong Bureau of Fire for two three-week HazMat training sessions.
- Forged agreements with the China Academic Library Association, Dalian University of Technology and Sichuan Institute of Scientific and Technical Information to share information
- Participated in the India Industrial Emergency Conference and established relationships with the Indian State of Gujarat. IFSI staff provided assistance with Emergency Operations and Incident Management training development at the conference.



More than 25 participants from different regions in China attended the four-week Chinese Librarian Summer Program.



## A Commitment to Research

IFSI is a national leader in research efforts to protect firefighters and advance the technologies available to them. The Institute focuses its efforts on action-oriented studies in health and wellness, incident management and equipment technologies. Research will now be carried out at the new Learning Resource and Research Center and at IFSI partner facilities on and off campus. Institute researchers also collaborate with numerous University of Illinois departments on interdisciplinary studies, including the Colleges of Engineering, Applied Health Sciences, and Medicine. IFSI researchers also work with Skidmore College, the Chicago Fire Department and the Fire Department of New York.

## Research FY2010 Highlights

- Hosted the Firefighter Cardiovascular Health & Safety Research Summit. The workshop brought together more than 40 attendees to identify current firefighter cardiovascular research findings and to determine methods for effectively implementing the lessons learned.
- Received a Department of Homeland Security grant of almost \$1 million to study the influence of aspirin on reducing the risk of heart attacks suffered by firefighters.
- Completed a two year project on firefighter rehabilitation protocols. The National Institute for Occupational Safety & Health (NIOSH) provided a \$150,000 grant for this study.
- Completed the second year of a 2 ½-year investigation of the effects of prolonged fire fighting activity on cardiovascular function. The Federal Emergency Management Agency (FEMA) is supporting this work with a \$985,661 grant.
- Continued a three year study on escape rope performance and design in fireground operations. The project measured the effects of temperatures and dynamic load on failure of personal escape rope and tested the ability of various approaches to protect ropes and extend rescue times.
- Partnered with NIOSH Division of Surveillance, Hazard Evaluations, and Field Studies to collect exposure data and document hazards during structural fire fighting and overhaul operations.

NIOSH personnel collect data during a simulated structure fire at IFSI.





## What's the number-one cause of firefighter line-of-duty deaths?

The answer is heart attacks, which is why IFSI researchers are so enthusiastic about the potential benefits of their newest research project.

In April 2010, IFSI was notified that it would receive its fourth grant from the Fire Prevention & Safety Research and Development fund of the Department of Homeland Security (DHS). The grant provides \$999,801 to study the effects of an aspirin regimen on reducing firefighters' risk of heart attacks.

The project was proposed by an interdisciplinary group led by the IFSI research team, which conducted earlier studies on cardiovascular changes caused by fire fighting. Twenty firefighters over the age of 40 will participate in tests to measure heart function at rest and following fire fighting activity. Scientists from the University of Illinois' Departments of Kinesiology and Community Health will collaborate on the project.



In 2010, our research results were prepared for peer-reviewed distribution in various publications. Six manuscripts were published or are in press in the following publications:

***Ergonomics***

***Vascular Medicine***

***Safety Science***

***Prehospital Emergency Care***

Our research has been presented at national scientific conferences including:

**American Heart Association**

**American College of Sports Medicine**

**Society of Experimental Mechanics**

In addition, research results have been delivered to a variety of fire service audiences at:

**Illinois Fire Service Institute Winter Fire School**, Champaign, IL, January 2010

**Fire Department Instructors Conference (FDIC)**, Indianapolis, IN, April 2010

**12-hour course on Firefighter Rehab** at the Illinois Fire Service Institute Fire College, Champaign, IL, June 2010

**Fire Rescue International (FRI) Conference**, Chicago, IL, August 2010



## Collaboration with the Chicago Fire Department

One of IFSI's most successful collaborations has been with the Chicago Fire Department (CFD). The Institute has sponsored a number of training events and other projects in the city and on the Champaign campus to help increase Chicago firefighters' participation in Institute classes. In FY 2010, our instructors delivered 159 courses to 10,611 registrants representing 94 percent of all fire departments in the Chicago metro area.

### **Programs that were developed and delivered by IFSI staff to Chicago firefighters include:**

- An Incident Safety Officer program for newly promoted Battalion Chiefs and Captains. This course will be added to the training these two ranks will receive upon promotion.
- SWMD classes for 275 CFD members. For the SWMD Rope Technician course at the Quinn Fire Academy, IFSI program managers worked with Chicago city engineers to design a special anchoring system to accommodate high-line transfers.
- Updated and presented the Chicago Fire Department High Rise Procedure training, a program that was mandatory for all ranks of Battalion Chief and above.
- Completed HazMat Technician A training for nearly 4,000 Chicago firefighters since the beginning of the program.
- Monitored and assisted in physical training stations for the City of Chicago/Chicago Fire Department Physical Fitness Incentive program.





# Illinois Terrorism Task Force (ITTF)

## FY2010 Highlights

- Hosted ten teams for a HazMat Validation exercise in Champaign in April 2010. The certification involved 30 hours of hands-on scenarios for intermixed teams.
- Implemented the NIMS-compliant Incident Management Team approach in all daily activities.
- Provided operations support for teams in completing their NIMS Training Task Book. This opportunity was offered during the Institute's annual Fire College and Winter Fire School.



## A National Leader In Homeland Security Training

IFSI continued its work as co-chair of the ITTF Training Committee. In that role, we provide leadership in the development and delivery of interdisciplinary training for responders in Illinois and throughout the nation.

All of IFSI's validation exercises are conducted under HESEEP (Homeland Security Exercise and Evaluation Program) standards. These protocols are used for baseline training for HazMat and technical rescue teams, which enhances validation value under federal guidelines.

In FY2010, IFSI delivered a Train-the-Trainer HazMat Operations class to more than 60 first responders in Anchorage, Fairbanks and Juneau, Alaska. These students are now able to teach this federally-approved curriculum.

“My first tech-level HazMat response reminded me of my IFSI HazMat training.”

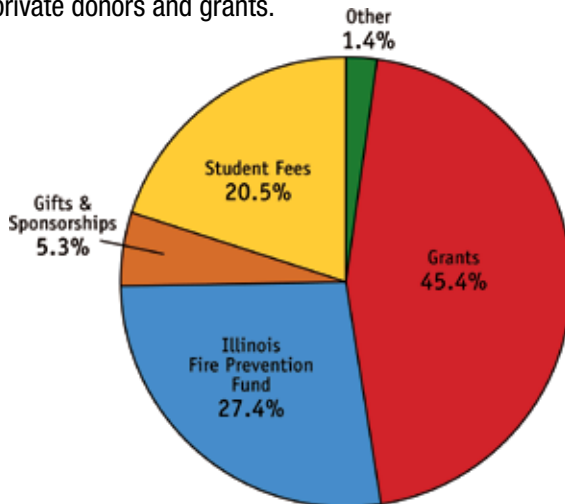
—Macomb firefighter

**In 2010, IFSI delivered Homeland Security courses to more than 13,000 first responders.**

**Since the Illinois Terrorism Task Force (ITTF) was created in 2000, IFSI has collaborated with ITTF organizations to provide more than 17,500 courses to over 200,000 first responders and local officials representing some 2.5 million student instructional hours.**

## Outreach & Public Engagement

Hands-on training is the signature of IFSI, and it's a commitment that requires extensive resources. As our services and course enrollments increase, the need for additional funding becomes more critical. Our ability to respond to new fire fighting challenges depends on the continuing support of Illinois fire departments, state agencies, private donors and grants.



### Generous support from business partners

Companies throughout Illinois have supported IFSI with cash and in-kind donations. Our thanks go to:

- **Paratech, Inc.** — to name the executive conference room in the LRRC.
- **University of Illinois Employees Credit Union** — to name a digital imaging laboratory and annually to support the new Fire Protection Engineering Program.
- **GROWMARK** — for the LRRC.
- **WS Darley** — for the LRRC.
- **Illinois Fire Chiefs Association** — to support the Explorer-Cadet Hands-On Training Fire School.
- **Decatur Memorial Hospital** — Tanker railcar.
- **Caterpillar, Inc.** — Wood pallets for burning and equipment on loan for large vehicle rescue training.
- **Brock Grain Systems** — Grain bin.
- **Lincoln Ag Center** — Anhydrous Ammonia Bar.
- **Arends Brothers LLC** — Combine for ag training.
- **Champaign Urbana Mass Transit District** — City bus.
- **Akron Brass** — Nozzles and tools.
- **Streamlight** — Flashlights.
- **Draeger Safety, Inc.** — SCBA and air monitoring equipment.
- **MSA and Air One** — SCBA equipment.

### Outreach and Public Engagement

#### FY2010 Highlights

- Expanded our partnership with the Chicago Fire Department to deliver officer classes to its newly promoted members. CFD is also using IFSI's Champaign campus for intensive live-burn training.
- Established a presence on Facebook to reach more students.
- Added video streaming to the IFSI web site.

“I attended several IFSI classes before I responded to my first fire. At that fire, I knew what to do and how to do it – all because of my IFSI training experiences.”

—Edge-Scott Firefighter





## Partnerships

IFSI's many strategic partnerships allow us to share knowledge and resources with leading educators, researchers, corporations, professional associations and other organizations. Current partners and their contributions include:

- **Illinois Firefighter's Association** – funding and delivery of CD training software for use by local fire departments.
- **Illinois Association of Fire Protection Districts** – participation in trustee programs to promote training opportunities and availability, plus financial support for classes.
- **Illinois Propane Education and Research Council (IPERC)** – delivery of training in fighting propane fires at no cost.
- **Illinois Petroleum Resources Board** – funding for training to extinguish oil well fires in southern Illinois.
- **Illinois Department of Natural Resources** – providing training for firefighters and others to respond to extensive and specialized fires in a wildland or urban environment and to qualify for Red Card certification.
- **University of Illinois at Urbana-Champaign** – cross-campus initiatives to fund interdisciplinary research and academic programs.
- **State Farm Insurance Company** – support for the National Fire & Emergency Services Exploring Conference.
- **Office of the State Fire Marshal** – funding for the Cornerstone program and certification of firefighters.
- **State of Illinois Fire Caucus** – cooperative work on strategic public policy issues.
- **Underwriters Laboratories** – joint sponsorship of fire-related research and product field trials.
- **Chicago Fire Department (CFD)** – projects in four key areas: training, education, research and translating “science to the street.” CFD is also a partner with IFSI in research projects with Underwriters Laboratories.
- **Illinois Fire Services Association** – cooperative work on strategic public policy issues.



“Everyone raved about the training. One was heard to say ‘it was the best training I’ve been to.’ The demo (IFSI Instructor) Shawn (Bloemker) did at the end of the class was excellent. It demonstrated backdrafts, flashovers and smoke explosions so everyone could physically see them.”







## Administration

### **Richard Jaehne**

Director  
(217) 333-8926  
jaehne@fsi.illinois.edu

### **Roger Lunt**

Deputy Director  
(217) 244-9674  
rlunt@fsi.illinois.edu

### **John (Mac) McCastland**

Associate Director  
(815) 834-9201  
jmccastl@fsi.illinois.edu

### **Brian Brauer**

Assistant Director  
(217) 333-9027  
brbrauer@fsi.illinois.edu

### **Harry Clore**

Director of Budget & Resource Planning  
(217) 244-6359  
hclore@fsi.illinois.edu

## Illinois Fire Service Institute's mission:

To help firefighters do their work through training, education, information and research.



## Illinois Fire Service Institute

11 Gerty Drive  
Champaign IL 61820  
(217) 333-3800  
Toll-free (800) 437-5819  
FAX: (217) 244-6790  
Email: [fsi@fsi.illinois.edu](mailto:fsi@fsi.illinois.edu)  
[www.fsi.illinois.edu](http://www.fsi.illinois.edu)